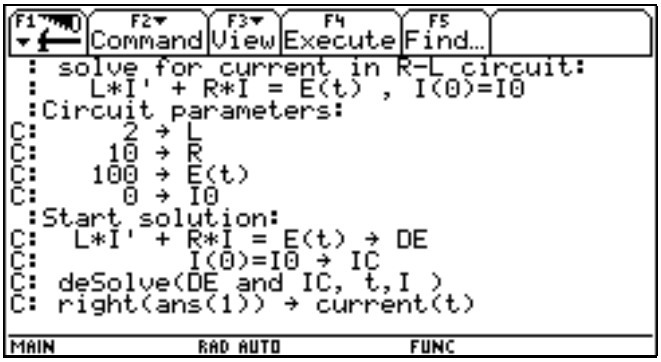
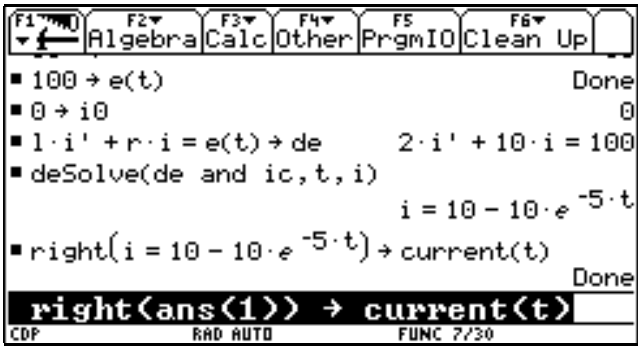
TI calculator solution for current in an R-L electric circuit

An efficient way to execute a sequence of commands on a TI calculator (TI-89 or TI-92) is by way of a "text variable" (refer to Chapter 16 of the TI-92 Guidebook, available online at http://www.ti.com/calc/docs/92guide.htm). In the figure below is an example to solve an R-L circuit. Each text line starts with a colon (**:**) and if the line has an executable command, the colon is preceded by a `C`. This text variable is set up to solve for current I in a circuit with EMF=100V, L=2H, and R=10Ω, and with 0 current at time t=0.



Press F4 to execute any line the cursor is in, or go to the `F2 Command` menu to choose `5.Evaluate to EOF` to execute all lines from the cursor line down to the end of the text file. Each line is executed in the `Home` screen. The figure below shows some of the output of this text file.



The final line stores the solution to the DE in a function `current(t)`. You have the option of storing `current(x)` in the variable `y1(x)` in order to graph or generate a table of values for `current`. For example, we could graphically answer the following question.

At what time does the current equal 8 amps? Store `10-10e^(-5x)` in `y1(x)` and `8` in `y2(x)`. Go to the `WINDOW` and set the `xmin, xmax,` and `xres` values (0, 1, and 5 should do). Press `F2 Zoom` and then `A:ZoomFit` in order to fit the two graphs in the screen. Then press `F5 Math` and select `5:Intersection;` follow the prompts to choose the two curves and an interval containing the intersection point. The answer is approximately t = 0.32 .